

ABSTRACT

The invention is directed to a fabrication method for a device for regulating the flow of electric current with high dielectric constant gate insulating layer and a source and/or drain forming a Schottky contact or Schottky-like region with a substrate. In one aspect, the gate insulating layer has a dielectric constant greater than the dielectric constant of silicon. In another aspect, the current regulating device may be a MOSFET device, optionally a planar P-type or N-type MOSFET, having any orientation. In another aspect, the source and/or drain may consist partially or fully of a silicide.

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